AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. – 23. (Canceled)

24. (Previously Presented) An evaluation mask for evaluating a projection-type exposure apparatus, the mask comprising:

at least one diffraction grating pattern for producing a diffracted light of the positive first-order and a diffracted light of negative first-order, diffraction efficiencies of the diffracted lights being different respectively, one of the diffracted lights having a magnitude that is substantially zero, the at least one diffraction grating pattern being divided into eight regions, each of the regions includes a diffraction grating, and an image of the at least one diffraction grating pattern being projected onto a test substrate or an image detector by the projection-type exposure apparatus; and

a reference pattern for obtaining a reference image to measure a displacement of the image of the at least one diffraction grating pattern, and an image of the reference pattern being projected onto the test substrate or the image detector by the projection-type exposure apparatus,

wherein the images of the at least one diffraction grating pattern and the reference pattern projected onto the test substrate or the image detector are used for evaluating the projection-type exposure apparatus.

25. (Previously Presented) The evaluation mask according to claim 24, wherein the eight regions are divided into four groups, each of the groups comprises two adjacent diffraction gratings and the two adjacent diffraction gratings are oppositely directed.

26. (Previously Presented) The evaluation mask according to claim 24, wherein the reference pattern includes a diffraction grating pattern that is symmetrically relative to the at least one diffraction grating pattern.

27. (Previously Presented) The evaluation mask according to claim 24, wherein the reference pattern includes a first reference pattern and a second reference pattern and the at least one diffraction grating pattern is arranged between the first reference pattern and the second reference pattern.

28. (Previously Presented) The evaluation mask according to claim 24, wherein the at least one diffraction grating pattern include a first diffraction grating pattern and a second diffraction grating pattern, and the reference pattern is arranged between the first diffraction grating pattern and the second diffraction grating pattern.

29. (Previously Presented) The evaluation mask according to claim 24, wherein the at least one diffraction grating pattern include a first diffraction grating pattern and a second diffraction grating pattern, and the reference pattern includes a first reference pattern and a second reference pattern; and

the first diffraction grating pattern and the first reference pattern being arranged in parallel with each other on a first straight line, the second diffraction grating pattern and the second reference pattern being arranged in parallel with each other on a second straight line running perpendicular to the first straight line.

30. (Previously Presented) The evaluation mask according to claim 24, further comprising:

a trim pattern; and

a part of a group of a line pattern which comprises the image of the at least one diffraction grating pattern being covered with an image of the trim pattern when the trim pattern and the diffraction grating pattern are exposed to light and images of the trim pattern and the at least one diffraction grating pattern are superposed.

31. (Previously Presented) The evaluation mask according to claim 24, wherein

a plurality of pairs of the at least one diffraction grating pattern and the reference pattern are arranged rotationally at every 45° or 22.5°.

32. (Previously Presented) The evaluation mask according to claim 24, wherein the at least one diffraction grating pattern includes a light-shield section for shielding light and first and second transparent sections for transmitting light; and

an absolute value of the difference between a phase of light transmitted through the first transparent section and a phase of light transmitted through the second transparent section being different than 180°.

33. (Previously Presented) The evaluation mask according to claim 32, wherein the absolute value is equal to 90°.

34. (Previously Presented) An evaluation mask according to claim 33, wherein the ratio of the width of the light-shield section, the width of the first transparent section and the width of the second transparent section is substantially 2 : 1 : 1.

35. (Previously Presented) A focus measuring method for measuring a defocus of an image of a test mark formed on a focus test mark projected on a substrate, the image being projected by a projection-type exposure apparatus, the projection-type exposure apparatus projecting an image of a mask pattern formed in a photo mask onto the substrate by way of a projection optical system comprising:

preparing an evaluation mask as the focus test mark, the evaluation mask comprising: at least one diffraction grating pattern for producing a diffracted light of the positive first-order and a diffracted light of negative first-order, diffraction efficiencies of the diffracted lights being different respectively, one of the diffracted lights having a

magnitude that is substantially zero, and a reference pattern for obtaining a reference image to measure a displacement of an image of the at least one diffraction grating pattern,

preparing a substrate with a photo sensitizing material;

exposing the image of the at least one diffraction grating pattern and an image of the reference pattern onto the substrate simultaneously, the at least one diffraction grating pattern and the reference pattern comprising a test mark in the evaluation mask; and

measuring a relative distance of the image of the at least one diffraction grating pattern formed on the substrate and the image of the reference image formed on the substrate.

36. (Previously Presented) The focus measuring method according to claim 35, wherein the at least one diffraction grating pattern being divided into eight regions, each of the regions includes a diffraction grating.

37. (Previously Presented) The focus measuring method according to claim 36, wherein the eight regions are divided into four groups, each of the groups comprises two adjacent diffraction gratings and the two adjacent diffraction gratings are oppositely directed.

38. (Previously Presented) The focus measuring method according to claim 35, wherein

the reference pattern is a diffraction grating pattern that is symmetrically relative to the at least one diffraction grating pattern.

39. (Previously Presented) The focus measuring method according to claim 35, wherein

the reference pattern includes a first reference pattern and a second reference pattern and the at least one diffraction grating pattern is arranged between the first reference pattern and the second reference pattern.

40. (Previously Presented) The focus measuring method according to claim 35, wherein

the at least one diffraction grating pattern include a first diffraction grating pattern and a second diffraction grating pattern and the reference pattern is arranged between the first diffraction grating pattern and the second diffraction grating pattern.

41. (Previously Presented) The focus measuring method according to claim 35, wherein

the at least one diffraction grating pattern include a first diffraction grating pattern and a second diffraction grating pattern and the reference pattern includes a first reference pattern and a second reference pattern; and

the first diffraction grating pattern and the first reference pattern being arranged in parallel with each other on a first straight line, the second diffraction grating pattern

and the second reference pattern being arranged in parallel with each other on a second straight line running perpendicular to the first straight line.

42. (Previously Presented) An aberration measuring method for measuring an aberration of a projection-type exposure apparatus based on a defocus of an image of a test mark formed on a focus test mark projected on a substrate, the image being projected by the projection-type exposure apparatus, the projection-type exposure apparatus projecting an image of a mask pattern formed in a photo mask onto the substrate by way of a projection optical system comprising:

preparing an evaluation mask as the focus test mark, the evaluation mask comprising: at least one diffraction grating pattern for producing a diffracted light of the positive first-order and a diffracted light of negative first-order, diffraction efficiencies of the diffracted lights being different respectively, one of the diffracted lights having a magnitude that is substantially zero, and a reference pattern for obtaining a reference image to measure a displacement of an image of the at least one diffraction grating pattern,

preparing a substrate with a photo sensitizing material;

exposing the image of the at least one diffraction grating pattern and an image of the reference pattern onto the substrate simultaneously, the at least one diffraction grating pattern and the reference pattern comprising a test mark in the evaluation mask under the condition of $\lambda / \{NA (1 - \sigma)\} \leq P \leq 2 \leq \lambda / \{NA (1 + \sigma)\}$, where σ is a partial coherence of a lighting optical system for lighting the test mark, P is a period of an

image of a first pattern of the test mark, λ is the wavelength of light of the lighting optical system and NA is a numerical aperture of the projection optical system; and

measuring the relative distance of the image of the at least one diffraction grating pattern formed on the substrate and the image of the reference image formed on the substrate.

43. (Previously Presented) The aberration measuring method according to claim 42, wherein the at least one diffraction grating pattern being divided into eight regions, each of the regions includes a diffraction grating.

44. (Currently Amended) The aberration measuring method according to claim [[42]] 43, wherein the eight regions are divided into four groups, each of the groups comprises two adjacent diffraction gratings and the two adjacent diffraction gratings are oppositely directed.